

REMARKS

In response to the Office Action, Claims 3 and 6 are amended. Claims 1-6 remain in the Application. Reconsideration of the pending claims is respectfully requested in view of the above amendments and the following remarks.

I. Claims Rejected Under 35 U.S.C. §112

Claims 3 and 6 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Examiner rejects the term “conventional method” as it is not described in the specification. Applicants amended Claims 3 and 6 to remove the phrase “a conventional method of detecting an open-loop pitch delay of the G.723.1 speech encoder.” Withdrawal of the rejection is respectfully requested.

II. Claims Rejected Under 35 U.S.C. § 103(a)

A. Claims 1, 3, 4 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *An Efficient Transcoding Algorithm for G.723.1 and EVRC Speech Coders* by Kim et al. (“Kim”) in view of U.S. Patent No. 6,829,579 issued to Jabri et al. (“Jabri”).

To establish a *prima facie* case of obviousness, the relied upon references must teach or suggest every limitation of the claim such that the invention as a whole would have been obvious at the time the invention was made to one skilled in the art. Claim 1 recites a speech transcoding apparatus, including the elements of:

“a linear interpolating portion, which linearly interpolates a closed-loop pitch delay decoded by a selected mode vocoder (SMV) speech decoder to make the closed-loop pitch delay fit in a search section for open-loop pitch delays of G.723.1 speech encoder, to thereby obtain a changed closed-loop pitch delay of the SMV decoder

....

a pitch delay determining portion, which,determines the changed closed-loop pitch delay of the SMV speech decoder to be an open-loop pitch delay of the G.723.1 speech encoder; and

a pitch delay detecting portion, which detects a closed-loop pitch delay of the G.723.1 speech encoder based on the determined open-loop pitch delay of the G.723.1 speech encoder.”

Kim discloses the use of a closed-loop pitch of a source coder to estimate an open-loop pitch of a target coder in a transcoding technique (page 1562, right column). The closed-loop pitch of the source coder is then compared with the closed-loop pitch of a previous pitch value of

the target coder. Kim does not disclose that, before the comparison, the closed-loop pitch delay of the source decoder (the recited SMV decoder) is linearly interpolated to make the closed-loop pitch delay fit in a search section for open-loop pitch delays of a target coder. Rather, the closed-loop pitch of the source decoder of Kim is used without linear interpolation. Kim also does not disclose that the linearly interpolated closed-loop pitch delay of the source decoder is compared with a predicted pitch delay of the target coder (the recited G.723.1 encoder). Rather, the closed-loop pitch delay of the source decoder is compared with a previous pitch value of the target coder. A single previous pitch value is different from the recited predicted pitch delay, which is based on past closed-loop pitch delays. Further, the predicted pitch delay disclosed by Kim and cited by the Examiner relates to an adaptive codebook search, which is not relevant to the open-loop pitch estimation. Thus, Kim does not disclose the use of linear prediction or pitch delay prediction in the estimation of the open-loop pitch delay of the target coder.

Jabri discloses the use of linear interpolation in transcoding. However, Jabri does not disclose that linear interpolation can be applied to two different kinds of pitch delays (i.e., the closed-loop pitch delay and the open-loop pitch delay). Jabri also does not disclose the comparison of a closed-loop pitch delay of the source decoder with a predicted pitch delay of the target coder. Thus, Kim in view of Jabri does not teach or suggest each of the elements of Claim 1 and its dependent Claim 3.

Analogous discussions apply to independent Claim 4 and its dependent Claim 6. Accordingly, reconsideration and withdrawal of the rejection of Claims 1, 3, 4 and 6 are respectfully requested.

B. Claims 2 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Jabri, as applied to Claims 1 and 4, and further in view of U.S. Patent No. 5,734,789 issued to Swaminathan et al. ("Swaminathan").

Claims 2 and 5 depend from Claims 1 and 4, respectively, and incorporate the limitations thereof. Thus, for at least the reasons mentioned above in regard to Claims 1 and 4, these dependent claims are non-obvious over Kim in view of Jabri.

Swaminathan is relied on for disclosing the use of two pitch delays per frame. However, these cited references do not cure the above-mentioned missing elements in Kim and Jabri.

Accordingly, reconsideration and withdrawal of the rejection of Claims 2 and 5 are respectfully requested.

CONCLUSION

In view of the foregoing, it is believed that all claims are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666.

Respectfully submitted,

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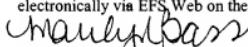
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